

ABSTRACT

A semiconductor wafer cleaning formulation for use in semiconductor fabrication comprising maleic acid and ethylene urea as essential components. The preferred formulation comprises maleic acid, ethylene urea, at least one carboxylic acid except maleic acid, at least one organic amine except ethylene urea and water. The formulation can optionally comprise at least one selected from the group consisting of an organic solvent, a chelating agent and a surfactant. The formulation is suitably used for removal of residue from semiconductor wafers following a resist ashing process, particularly for removal of residue from wafers containing delicate copper interconnect and low-k or ultra low-k interlayer dielectrics structures. There is also provided a method for cleaning the wafer by using the formulation.